CLAIMS

1. An encapsulated optoelectronic device, comprising:

a first body, of semiconductor material, having a first and a second face;

a second body, of semiconductor material, fixed to said first face of said first body;

a through window formed in said second body and exposing a portion of said first face of said first body;

at least one optoelectronic component fixed to said first body within said window;

first through connection regions extending through said first body from said first to said second face and in electrical contact with said optoelectronic component;

insulation regions surrounding said first through connection regions; and

first contact regions extending on said second face of said first body and connected to said optoelectronic component through said through connection regions.

2. The device according to claim 1, wherein said second body has a fiber housing groove extending from a side surface external to said window for housing an optical fiber.

3. The device according to claim 2, wherein said optoelectronic component comprises a laser device facing one end of said optical fiber.

4. The device according to claim 2, wherein said first body has a first metal region, and said fiber housing groove has a second metal region arranged next to said window, at least partially facing said first metal region and forming with said first metal region a pseudo-ferrule.

5. The device according to claim 4, wherein metal material is housed in and hermetically seals said pseudo-ferrule.

6. The device according to claim 2, wherein said first body has a through

channel facing said groove and forming a prolongation of said groove.

7. The device according to claim 6, wherein said through channel is closed with sealing material.

8. The device according to claim 2, comprising a resistive region extending on said first face of said first body and carrying welding material, said resistive region being connected to second contact regions formed on said second face via second through connection regions.

9. The device according to claim 1, wherein a cover of semiconductor material is bonded to said second body and hermetically closes said window.

10. A method for manufacturing an encapsulated optoelectronic device, comprising:

providing a first wafer, of semiconductor material, having a first face and a thickness;

forming insulation regions extending from said first face of said first wafer for a portion of said thickness and surrounding through connection regions;

providing a second wafer of semiconductor material;

forming a through window through said second wafer;

bonding said second wafer to said first face of said first wafer;

thinning said first wafer until reaching said insulation regions, thereby said first wafer has a second face and said through connection regions extend between said first face and said second face;

forming first contact regions on said second face of said first wafer in electrical connection with said through connection regions;

fixing, on said first face of said first wafer and through said window, at least one optoelectronic component; and

electrically connecting said optoelectronic component to said through connection regions.

11. The method according to claim 10, comprising, prior to bonding said second wafer, the step of forming, in said second wafer, a fiber housing groove extending from said window, and, after said step of thinning, the step of cutting said first and second wafers to obtain at least one package, thereby said fiber housing groove extends from a side surface of said package.

12. The method according to claim 11, comprising the step of inserting an optical fiber in said fiber housing groove, after said step of cutting.

13. The method according to claim 12, comprising, prior to inserting an optical fiber, the step of forming, in said first wafer, a passage facing said fiber housing groove and forming a prolongation of said groove.

14. The method according to claim 13, wherein said step of forming a passage comprises, prior to bonding, the step of forming an access groove in said first wafer for said thickness portion, wherein said step of bonding comprises aligning said access groove to said fiber housing groove, and said step of thinning comprises removing said semiconductor material of said first wafer underneath said access groove.

15. The method according to claim 13, comprising, prior to said step of bonding, the steps of forming a first metal region on said first face and forming a second metal region in said fiber housing groove next to said window, and wherein said step of bonding comprises aligning said first and said second wafer thereby said second metal region at least partially faces said first metal region and forms a pseudo-ferrule with said first metal region.

16. The method according to claim 15, comprising the step of inserting hermetic sealing metal material in said pseudo-ferrule, after said step of inserting an optical fiber.

17. The method according to claim 11, comprising, prior to said step of bonding, forming a resistive region on said first face connected to second contact regions formed on said second face via second through connection regions formed in said first wafer, and laying welding material on top of said resistive region.

18. The method according to claim 17, comprising, after said step of laying welding material, the steps of: introducing an optical fiber in said fiber housing groove; seeking a maximum power position for said optical fiber; heating said welding material through said resistive region; and fixing said optical fiber in position.

19. A method for manufacturing a package for an optoelectronic component, comprising:

providing a first wafer of semiconductor material, having a first face and a thickness;

forming insulation regions extending from said first face of said first wafer for a portion of said thickness and surrounding through connection regions;

providing a second wafer of semiconductor material;

forming a through window through said second wafer;

bonding said second wafer to said first face of said first wafer;

thinning said first wafer until reaching said insulation regions, thereby said first wafer has a second face and said through connection regions extend between said first face and said second face; and

forming first contact regions on said second face of said first wafer in electrical connection with said through connection regions.